APPENDIX B

US 20030135818A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2003/0135818 A1

Goodwin et al. (43) Pub. Date: Jul. 17, 2003

(54) SYSTEM AND METHOD FOR CALCULATING A USER AFFINITY

(76) Inventors: James Patrick Goodwin, Beverly, MA (US); Andrew Lewis Schirmer, Andover, MA (US); Carl Joseph Kraenzel, Boston, MA (US)

Correspondence Address:
MINTZ LEVIN COHN FERRIS GLOVSKY AND POPEO PC
12010 SUNSET HILLS ROAD
SUITE 900
RESTON, VA 20190 (US)

(21) Appl. No.: 10/044,922

(22) Filed: Jan. 15, 2002

Related U.S. Application Data

(60) Provisional application No. 60/347,283, filed on Jan. 14, 2002.

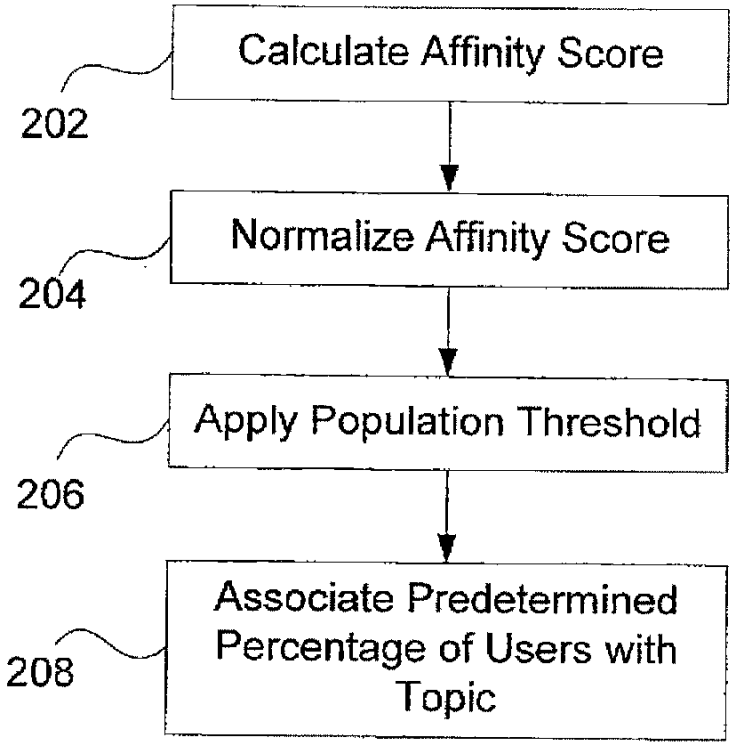
Publication Classification

(51) Int. Cl.[7] G06F 17/00

(52) U.S. Cl. 715/500

(57) ABSTRACT

A system, method and processor readable medium for determining a user affinity for a category. The system calculates an affinity score based on a record of actions performed on the document by a user and a categorization of the document. This affinity score is computed by a weighted sum of factors associated with the document. The affinity score is normalized and a population threshold is applied. A predetermined percentage of the population of users associated with the document is determined and those users are said to have an affinity for at least one category assigned to the document. The system may also decay an affinity score if a user has not performed at least one action on the document. If the user performs an action on the document, however, the affinity may be reset. A user, system administrator, or other user may also be enabled to decline an affinity for a category.



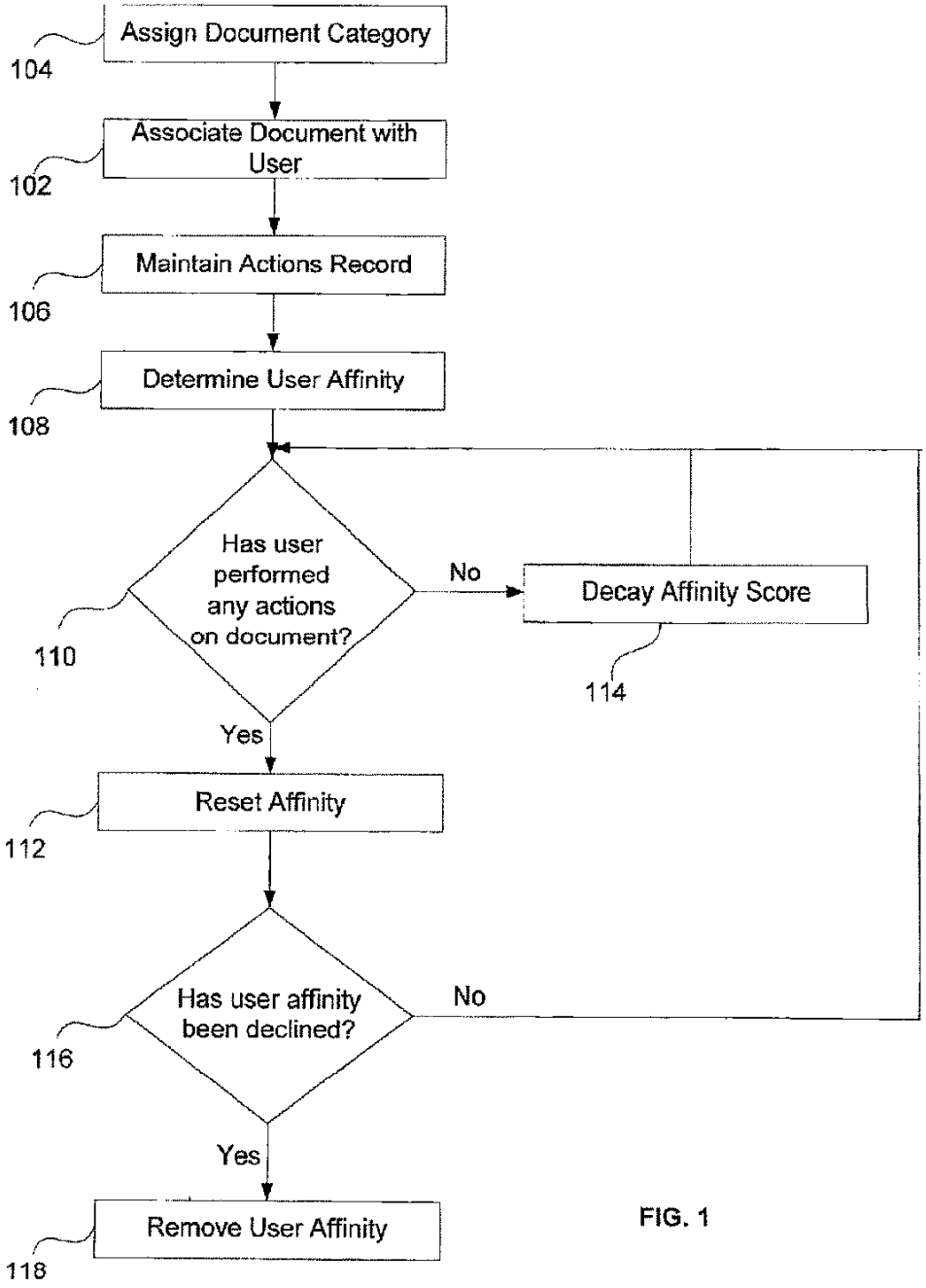

Assign Document Category
104
Associate Document with User
102
Maintain Actions Record
106
Determine User Affinity
108
Has user performed any actions on document?
110
No
Decay Affinity Score
114
Yes
Reset Affinity
112
Has user affinity been declined?
116
No
Yes
Remove User Affinity
118

FIG. 1

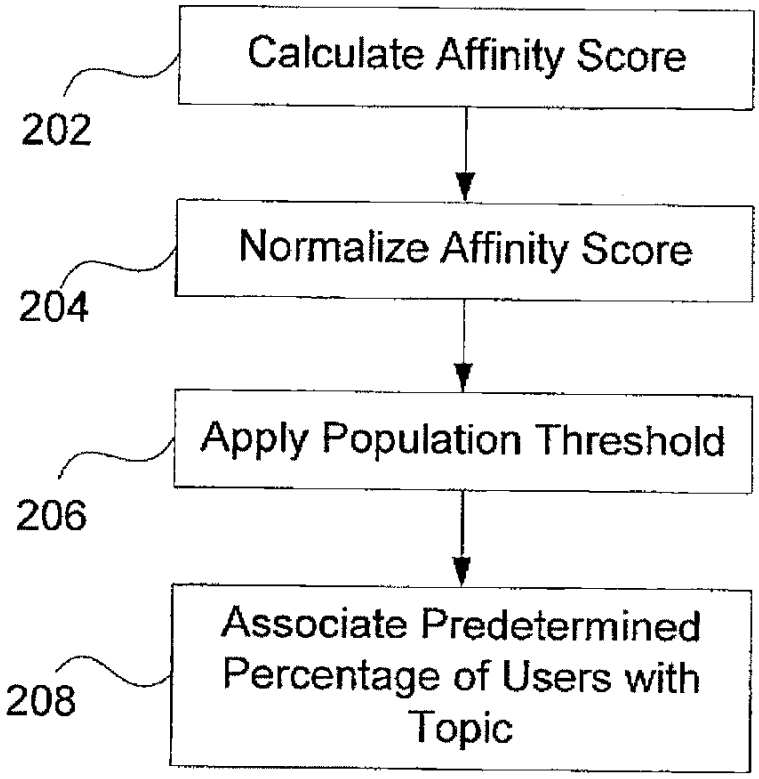

Calculate Affinity Score
202
Normalize Affinity Score
204
Apply Population Threshold
206
Associate Predetermined Percentage of Users with Topic
208

FIG. 2

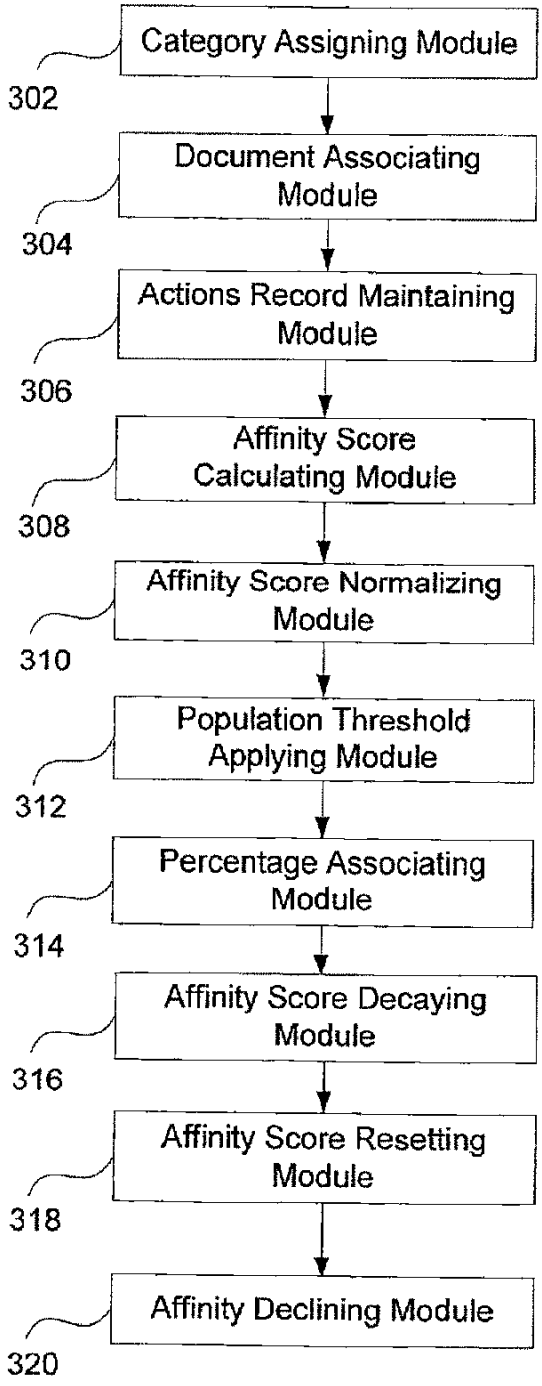

Category Assigning Module
302
Document Associating Module
304
Actions Record Maintaining Module
306
Affinity Score Calculating Module
308
Affinity Score Normalizing Module
310
Population Threshold Applying Module
312
Percentage Associating Module
314
Affinity Score Decaying Module
316
Affinity Score Resetting Module
318
Affinity Declining Module
320

FIG. 3

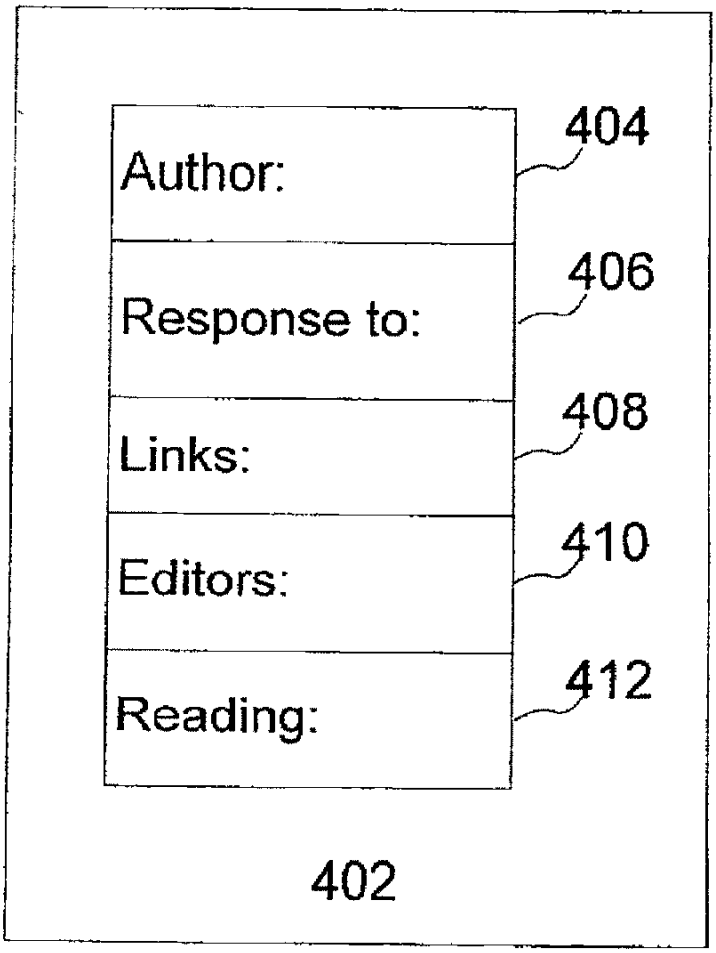

Author:
404
Response to:
406
Links:
408
Editors:
410
Reading:
412
402

FIG. 4

SYSTEM AND METHOD FOR CALCULATING A USER AFFINITY

RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Application No. _____ (Attorney Docket No. 23452-500-301), titled "Knowledge Server," filed Jan. 14, 2002, which is hereby incorporated by reference. This application is related to U.S. patent application Ser. No. 09/401,581, filed Sep. 22, 1999, which is also hereby incorporated by reference.

[0002] This application is also related to commonly owned patent application Ser. No. 09/192,047 titled "Method and System for Conveying Expertise Based on Document Usage," filed Nov. 13, 1998, which is hereby incorporated by reference. This application is also related to commonly owned patent application Ser. No. 09/191,587 titled "Method and System for Summarizing Topics of Documents Browsed by a User," filed Nov. 13, 1998, which is hereby incorporated by reference. This application is also related to commonly owned application Ser. No. 09/339,174 titled "Profile Inferencing Through Automated Access Control List Analysis Heuristics," filed Jun. 24, 1999, which is incorporated herein by reference.

FIELD OF THE INVENTION

[0003] The invention relates to a system and method for determining a user's affinity with a particular topic by using a formula to calculate a person's affinity based on historical actions of the user on particular documents and categorization of the documents.

BACKGROUND OF THE INVENTION

[0004] Many organizations have some form of employee directory and usually have made an attempt to augment this directory with personal profile attributes such as memberships, position, title or project affiliations. Many have attempted to expand each employee's profile by adding skills inventory, educational background or professional accomplishments. Many of these efforts have been successful, but most have not fulfilled their goal. The effort required to update and maintain such a profile and a subjective nature of self-description leads to inaccuracies or stale data.

[0005] Often, people who have relevant knowledge in a particular topic are not contacted because a method to search for persons with such knowledge has not been implemented. Most such people finder systems fail due to a lack of timely updates to an employee's profile. In addition, knowledgeable workers may not consider their experience to be valuable to others and may overlook this when manually completing profile forms. The result is that many manually built expertise locator systems are irrelevant or become outdated and eventually fail.

[0006] These and other drawbacks exist.

SUMMARY OF THE INVENTION

[0007] One object of the invention is to overcome these and other drawbacks of existing systems.

[0008] Another object of the invention is to provide a system and method for facilitating locating users with expertise in a particular topic.

[0009] Another object of the invention is to provide a system and method for facilitating locating users with expertise in a particular topic by assigning categories to objects associated with the users.

[0010] Another object of the invention is to provide a system and method for facilitating locating users with expertise in a particular topic by mapping between the categories and objects associated with the users.

[0011] Another object of the invention is to provide a system and method for facilitating locating users with expertise in a particular topic by maintaining a record actions performed on an object by the users.

[0012] Another object of the invention is to provide a system and method for facilitating locating users with expertise in a particular topic by calculating an affinity score for a user based on an object category and an actions record.

[0013] Another object of the invention is to provide a system and method for facilitating locating users with expertise in a particular topic by calculating an affinity based on a weighted sum of factors associated with an object including whether the user is an author or editor, if the user is responding to another object, if the user merely views the object, and if the object includes links to other objects.

[0014] Another object of the invention is to provide a system and method for facilitating locating users with expertise in a particular topic where the affinity score is calculated based on the weighted sum of factors over all time.

[0015] Another object of the invention is to provide a system and method for facilitating locating users with expertise in a particular topic where the affinity score decays over an inactive period of time.

[0016] Another object of the invention is to provide a system and method for facilitating locating users with expertise in a particular topic where the affinity score may be reset after any action is performed on the object.

[0017] These and other objects of the invention are achieved according to various embodiments of the invention. According to one embodiment, a system, method and processor readable medium comprising processor readable code embodied therein are provided that calculate a user affinity score for at least one category. The system includes at least one categorized document The document may be categorized according to a topic provided in the document. The document may be mapped to one or more categories. A record of actions performed on the document by one or more users may be maintained. A weighted sum of a user's role and actions on the document in a category may be computed to determine an affinity score for that user's contribution to the category. The affinity score may be calculated as a sum over all time. The affinity score may be normalized and a population threshold may be applied such that a predetermined top percentage of users in each category may be designated as having an affinity for the category. The affinity may be based on a user's role in accessing the document, for example, whether the user is an author, editor, or reader of the document, whether the user is responding to another object of the same or different category, and whether the object includes links to other documents or objects of the same or different category.

[0018] If a user does not perform any actions on the document for a predetermined period of time, that user's affinity may decay. The rate at which user's affinity may decay may be at a constant rate or other rate determined by, for example, a system administrator. The user's affinity may be calculated as a sum over all time using a formula of:

$$A*Va+T*Vt+L*V1+E*Ve+R*Vr;$$

[0019] where A is an author field, Va is an author value associated with the author field, T is a response to field, Vt is a response to value associated with the response to field, L is a links field, V1 is a links value associated with the links field, E is an editor's field, Ve is an editor's value associated with the editor's field, R is a reading field and Vr is a reading value associated with the reading field.

[0020] These and other objects, features and advantages of the invention will be readily apparent to those having ordinary skill in the pertinent art from the detailed description of the embodiments with reference to the appropriate figures below.

BRIEF DESCRIPTIONS OF THE DRAWINGS

[0021] **FIG. 1** is a schematic block diagram of a method for determining a user affinity according to one embodiment of the invention.

[0022] **FIG. 2** is a schematic block diagram of a method for calculating an affinity score for determining a user affinity according to one embodiment of the invention.

[0023] **FIG. 3** is a schematic block diagram of a system for determining a user's affinity according to one embodiment of the invention.

[0024] **FIG. 4** is a schematic diagram of a document that may be used to determine a user affinity according to one embodiment of the invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0025] A system, method, and processor readable medium having processor readable code embedded therein for determining a user affinity for a category is disclosed. The system may be used to facilitate locating users having an expertise or knowledge in a particular area. The system may automatically determine relationships between users and documents. The relationships may be based on a record of actions performed on documents by a user and a categorization of the documents.

[0026] **FIG. 1** illustrates a method for determining a user affinity for a category according to one embodiment of the invention. A category may be assigned to, for example, a document, step **102**. The category may be assigned, for example, when the document is created. The category may be assigned, for example, based on repeated words in the document, images, or other criteria. Additionally, categories may be changed or other categories may be assigned to the document by, for example, a system administrator or other user, after the document's creation. The document may then be associated with a user, step **104**. The document may be associated with the user when the user creates, edits, views or otherwise accesses the document. An actions record may be maintained, step **106**. The actions record may identify actions that have been performed on a document by a user, time of action, duration of action, and other criteria. Based on actions performed on the document by a user and the category or categories assigned to the document, a user affinity may be determined, step **108**. The user affinity may be a score calculated based on the user's actions regarding a particular document and the categories assigned to the document as described in further detail below with reference to **FIG. 2**.

[0027] After a user affinity has been determined, a determination may be made regarding whether the user has performed any additional actions on the document, step **110**. If the user has performed additional actions on a document, the score used to identify the affinity may be reset, step **112**. If, however, the user has not performed any actions on the document after a predetermined period of time, for example, one (1) week, the user affinity may decay. The user affinity may decay, for example, by a predetermined percentage after a predetermined period of time. For example, a user affinity for a particular category may have a score of one hundred (100). If the user does not perform any actions on the document, the score may be reduced by, for example, twenty (20) percent, after each week of non-activity. After the user affinity has been decayed, a determination may be made regarding whether the user has performed any actions on the document for up to, for example, another week. If the user does not perform any actions on the document, the user affinity may be decayed by, for example, another twenty (20) percent. If the user performs an action on the document, however, the user affinity may be reset, step **112**. Therefore, the score used to determine the user affinity may be reset to one hundred (100). The process of decaying may be repeated until a score of, for example, zero (0) is obtained or the user performs an action on the document. If a score of zero (0) is obtained, however, and the user performs an action on the document, the user affinity may be reset to, for example, one hundred (100).

[0028] A user or system administrator may be provided with an option of declining a user affinity. A determination may be made regarding whether the user or system administrator has declined the user affinity for a particular category, step **116**. If the user or system administrator has declined the user affinity, the user affinity may be removed, step **118**. If the user or system administrator has not declined user affinity, a determination may be made regarding whether the user has performed any actions on the document, step **110**. According to one embodiment, a user or system administrator may designate whether other users may decline a particular user's affinity for a category.

[0029] A method for determining a user affinity is shown in **FIG. 2**. The user affinity may be determined by calculating an affinity score, step **202**. The score may be based at least in part on meta data for a document. The meta data may include an author field, response to field, links field, editor's field, and reading field. The author field may identify the author of the document, the editor's field may identify any user that may have edited the document, and the reading field may identify any user that may have read or viewed the document. The response to field may identify whether the document is in response to another document. The links field may identify whether the document link to another document. Thus, for example, if a particular user is listed in the author, editor, and reading fields, a higher affinity score may be calculated. The affinity score may also be based on

actions performed on the document by the user. According to one embodiment of the invention, an infinity score may be calculated by assigning a value to the meta data of a document. For example, a value may be assigned to each of the author, response to, links, editor's, and reading fields. Each of the fields may be multiplied by the value associated with that field and then each product for all of the meta data may be added together compute the affinity score. For example, a formula for calculating an affinity score may be:

A*Va+T*Vt+L*V1+E*Ve+R*Vr;

[0030] where A is the author field, Va is an author value associated with the author field, T is a response to field, Vt is a response to value associated with the response to field, L is a links field, V1 is a links value associated with the links field, E is an editor's field, Ve is an editor's value associated with the editor's field, R is a reading field and Vr is a reading value associated with the reading field. Each value associated with the fields may differ based on importance or other criteria. For example, the author value may be higher than the reading value. This may be because an author may have more knowledge in a particular category as opposed to a user who merely reads or views the document. According to one embodiment of the invention, a reading portion of the above formula may be calculated as:

log10 (R+0.0001)*Vr

[0031] This may assist in preventing popular or frequently visited documents from dominating the affinity score. Any method of weighting and assigning values may be used. The formula may also include other or additional action/value pairs such as, for example:

X*Vx+Y*Vy

[0032] where X and Y are other actions that may be identified as showing knowledge of a topic and Vx and Vy are values associated with the X and Y actions. Any amount of N actions may be used in the formula.

[0033] After calculating the affinity score, the affinity score may be normalized, step **204**. Normalization may be performed according to any known manner. After normalizing the affinity score, a population threshold may be applied to the affinity score, step **206**. The population threshold may identify all users that receive an affinity score of, for example, higher than zero (0), for a category. A predetermined percentage of the users within the population threshold may then be identified as having an affinity for the category, step **208**. The affinity score may be cumulative for all time.

[0034] **FIG. 3** is a block diagram of a system for determining a user affinity according to one embodiment of the invention. The system may include a category assigning module **302**, document associating module **304**, actions record maintaining module **306**, affinity score calculating module **308**, affinity score normalizing module **310**, population thresholds applying module **312**, percentage association module **314**, affinity score maintaining module **316**, affinity score the setting module **318**, and affinity declining module **320**. Category assigning module **302** may enable one or more categories to be assigned to a document. The categories may be, for example, assigned when the document is created. Alternatively, a system administrator and/or one or more users may be granted rights for assigning, changing, or deleting categories assigned to one or more documents.

[0035] Document associating module **304** may associate a document with one or more users. The association may be, for example, a user to category relationship. Document associating module **304** may identify categories associated with a user according to the categories assigned to documents that the user has accessed. Actions record maintaining module **306** may be used to maintain a record of actions performed on a document by a user. For example, actions record maintaining module **306** may maintain a record of when a document is accessed by viewing, editing, creating, or other action performed by a particular user. The actions record may identify a date and time at which the document is accessed, an action performed on the document, and other information.

[0036] An affinity score may be calculated based on the actions record and categories assigned to documents by affinity score calculating module **308**. Affinity score calculating module **308** may use meta data included with the document to calculate an affinity score. The meta data may include the following information: author, response to, links, editors, and reading. A value may be associated with each meta data. For example, an author value may be assigned to the author information, a response value may be assigned to the response to information, a links value may be assigned to the links information, an editor's value may be assigned to the editors information, and a reading value may be assigned to the reading information. The affinity score may be a sum over all time and may be calculated using a formula of:

A*Va+T*Vt+L*V1+E*Ve+R*Vr;

[0037] where A is the author field, Va is the author value, T is a response to field, Vt is the response to value, L is a links field, V1 is the links value, E is an editor's field, Ve is the editor's value, R is a reading field and Vr is the reading value. According to one embodiment of the invention, a reading portion of the above formula may be calculated as:

log10 (R+0.0001)*Vr

[0038] This may assist in preventing popular or frequently visited documents from dominating the affinity score. The affinity score may then be normalized using affinity score normalizing module **310**. The affinity score may be normalized to any normalized value and according to any known normalizing method. After normalizing the affinity score, population threshold applying module **312** may identify users having a normalized affinity score of, for example, higher than zero (0). A predetermined percentage of users having a normalized affinity score higher than zero (0) may then be associated with the document using percentage association module **314**. The users within this percentage may then be identified as having an affinity for a category assigned to the document.

[0039] If a user does not perform an action on a document for which the user has an affinity, the affinity score may be decayed using affinity score decaying module **316**. The affinity score may be decayed at a constant or other rate and may be set by a system administrator or other user. For example, if a user has not performed any actions on a document for one (1) week, the affinity score may be decreased by twenty (20) percent. After each week of non-activity, the affinity score may be decreased by an additional twenty (20) percent. This may continue until the affinity score becomes zero (0), or a user performs an action

on the document. If a user performs an action on the document, the affinity score may be reset by affinity score resetting module **318**. Therefore, the affinity score may be set to the original affinity score provided to the user for the category.

[0040] According to one embodiment of the invention, the user, system administrator or other user may decline an affinity for a particular category. The users or system administrator may decline the affinity using affinity declining module **310**. Users other than the user for which the affinity is associated, may be granted rights for declining affinities for categories to other users.

[0041] **FIG. 4** illustrates a document **402** according to one embodiment of the invention. Document **402** may include an author field **404**, response to field **406**, links field **408**, editor's field **410**, and reading field **412**. The authors field **404** may identify the author of the document. Response to field **406** may identify whether the document was created in response to one or more other documents. Links field **408** may identify whether the document links to other documents or other documents link to document **402**. Editors field **410** may identify users who have edited document **402**. Reading field **412** may identify users that have read, or at least displayed, document **402**.

[0042] According to one embodiment of the invention, a user may search for other users having an affinity for one or more categories. The search may be performed in any manner. The user may search for all users having an affinity for a particular category, users having an affinity score higher than a certain threshold, or other criteria.

[0043] Other embodiments and uses of the invention will be apparent to those skilled in the art in consideration of the specification and practice of the invention disclosed herein. The specification and examples should be considered exemplary only. For example, although the invention has been described in terms of a document, a document may be any electronic document that may be categorized, for example, electronic mail messages, graphic files or other type of electronic document. Additionally, although the invention has been described in terms of multiple modules, fewer or a greater number of modules may be used and modules may not be provided in the same location. The scope of the invention is only limited by the claims appended hereto.

What is claimed is:

1. A method for determining a user affinity for a topic comprising the steps of:

assigning a category to at least one object, the at least one object comprising at least one topic;

associating the at least one object with at least one user;

maintaining a record of actions performed on the at least one object by the at least one user;

determining a user affinity for the at least one topic based on at least the category and the record of actions.

2. The method of claim **1**, wherein the step of determining a user affinity determines the user affinity by calculating an affinity score for the user's association with the at least one object.

3. The method of claim **2**, further comprising the step of:

normalizing the affinity score calculated.

4. The method of claim **3**, further comprising the step of:

applying a population threshold of a plurality of users to the affinity score.

5. The method of claim **4**, further comprising the step of:

associating a predetermined percentage of the plurality of users with the user affinity for the at least one topic.

6. The method of claim **1**, wherein the at least one object comprises at least one of an author field, a response to field, a links field, an editors field, and a reading field.

7. The method of claim **6**, further comprising the step of:

calculating an affinity score for the user's association with the at least one object.

8. The method of claim **7**, wherein the affinity score is calculated according to a formula of:

$$A*Va+T*Vt+L*V1+E*Ve+R*Vr;$$

where A is the author field, Va is an author value associated with the author field, T is the response to field, Vt is a response to value associated with the response to field, L is the links field, V1 is a links value associated with the links field, E is the editors field, Ve is an editors value associated with the editors field, R is the reading field, and Vr is a reading value associated with the reading field.

9. The method of claim **1**, further comprising the step of:

determining whether the at least one user has performed at least one action on the at least one object.

10. The method of claim **9**, further comprising the step of:

decaying the user affinity of the at least one user if a determination is made that the at least one user has not performed any actions on the at least one object.

11. The method of claim **10**, wherein the step of decaying the user affinity decays at a constant rate.

12. The method of claim **11**, wherein the constant rate is a predetermined percentage per predetermined period of time.

13. The method of claim **9**, further comprising the step of:

resetting the user affinity if a determination is made that the at least one user has performed the at least one action on the at least one object.

14. The method of claim **1**, further comprising the step of:

enabling a system administrator to decline the user affinity.

15. The method of claim **1**, further comprising the step of:

enabling the user to decline the user affinity.

16. A system for determining a user affinity for a topic comprising:

assigning means for assigning a category to at least one object, the at least one object comprising at least one topic;

associating means for associating the at least one object with at least one user;

maintaining means for maintaining a record of actions performed on the at least one object by the at least one user;

determining means for determining a user affinity for the at least one topic based on at least the category and the record of actions.

17. The system of claim 16, wherein the determining means determines the user affinity by calculating an affinity score for the user's association with the at least one object.

18. The system of claim 17, further comprising normalizing means for normalizing the affinity score calculated.

19. The system of claim 18, further comprising applying means for applying a population threshold of a plurality of users to the affinity score.

20. The system of claim 19, further comprising percentage associating means for associating a predetermined percentage of the plurality of users with the user affinity for the at least one topic.

21. The system of claim 16, wherein the at least one object comprises at least one of an author field, a response to field, a links field, an editors field, and a reading field.

22. The system of claim 21, further comprising calculating means for calculating an affinity score for the user's association with the at least one object.

23. The system of claim 22, wherein the affinity score is calculated according to a formula of:

A*Va+T*Vt+L*V1+E*Ve+R*Vr;

where A is the author field, Va is an author value associated with the author field, T is the response to field, Vt is a response to value associated with the response to field, L is the links field, V1 is a links value associated with the links field, E is the editors field, Ve is an editors value associated with the editors field, R is the reading field, and Vr is a reading value associated with the reading field.

24. The system of claim 16, further comprising action determining means for determining whether the at least one user has performed at least one action on the at least one object.

25. The system of claim 24, further comprising decaying means for decaying the user affinity of the at least one user if a determination is made that the at least one user has not performed any actions on the at least one object.

26. The system of claim 25, wherein the decaying means decays the affinity score at a constant rate.

27. The system of claim 26, wherein the constant rate is a predetermined percentage per predetermined period of time.

28. The system of claim 24, further comprising resetting means for resetting the user affinity if a determination is made that the at least one user has performed the at least one action on the at least one object.

29. The system of claim 16, further comprising declining means for enabling a system administrator to decline the user affinity.

30. The system of claim 16, further comprising declining means for enabling the user to decline the user affinity.

31. A system for determining a user affinity for a topic comprising:

an assigning module that assigns a category to at least one object, the at least one object comprising at least one topic;

an associating module that associates the at least one object with at least one user;

a maintaining module that maintains a record of actions performed on the at least one object by the at least one user;

a determining module that determines a user affinity for the at least one topic based on at least the category and the record of actions.

32. The system of claim 31, wherein the determining module determines the user affinity by calculating an affinity score for the user's association with the at least one object.

33. The system of claim 32, further comprising a normalizing module that normalizes the affinity score calculated.

34. The system of claim 32, further comprising an applying module that applies a population threshold of a plurality of users to the affinity score.

35. The system of claim 34, further comprising a percentage associating module that associating a predetermined percentage of the plurality of users with the user affinity for the at least one topic.

36. The system of claim 31, wherein the at least one object comprises at least one of an author field, a response to field, a links field, an editors field, and a reading field.

37. The system of claim 36, further comprising a calculating module that calculates an affinity score for the user's association with the at least one object.

38. The system of claim 37, wherein the affinity score is calculated according to a formula of:

A*Va+T*Vt+L*V1+E*Ve+R*Vr;

where A is the author field, Va is an author value associated with the author field, T is the response to field, Vt is a response to value associated with the response to field, L is the links field, V1 is a links value associated with the links field, E is the editors field, Ve is an editors value associated with the editors field, R is the reading field, and Vr is a reading value associated with the reading field.

39. The system of claim 31, further comprising an action determining module that determines whether the at least one user has performed at least one action on the at least one object.

40. The system of claim 39, further comprising a decaying module that decays the user affinity of the at least one user if a determination is made that the at least one user has not performed any actions on the at least one object.

41. The system of claim 40, wherein the decaying module decays the affinity score at a constant rate.

42. The system of claim 41, wherein the constant rate is a predetermined percentage per predetermined period of time.

43. The system of claim 39, further comprising a resetting module that resets the user affinity if a determination is made that the at least one user has performed the at least one action on the at least one object.

44. The system of claim 31, further comprising a declining module that enabling a system administrator to decline the user affinity.

45. The system of claim 31, further comprising declining module that enabling the user to decline the user affinity.

46. A processor readable medium comprising processor readable code embodied therein for determining a user affinity for a topic, the medium comprising:

assigning code that causes a processor to assign a category to at least one object, the at least one object comprising at least one topic;

associating code that causes a processor to associate the at least one object with at least one user;

maintaining code that causes a processor to maintain a record of actions performed on the at least one object by the at least one user;

determining code that causes a processor to determine a user affinity for the at least one topic based on at least the category and the record of actions.

47. The medium of claim 46, wherein the determining code determines the user affinity by calculating an affinity score for the user's association with the at least one object.

48. The medium of claim 47, further comprising normalizing code that causes a processor to normalize the affinity score calculated.

49. The medium of claim 48, further comprising applying code that causes a processor to apply a population threshold of a plurality of users to the affinity score.

50. The medium of claim 49, further comprising percentage associating code that causes a processor to associate a predetermined percentage of the plurality of users with the user affinity for the at least one topic.

51. The medium of claim 46, wherein the at least one object comprises at least one of an author field, a response to field, a links field, an editors field, and a reading field.

52. The medium of claim 51, further comprising calculating code that causes a processor to calculate an affinity score for the user's association with the at least one object.

53. The medium of claim 52, wherein the affinity score is calculated according to a formula of:

$$A*Va+T*Vt+L*Vl+E*Ve+R*Vr;$$

where A is the author field, Va is an author value associated with the author field, T is the response to field, Vt is a response to value associated with the response to field, L is the links field, Vl is a links value associated with the links field, E is the editors field, Ve is an editors value associated with the editors field, R is the reading field, and Vr is a reading value associated with the reading field.

54. The medium of claim 46, further comprising action determining code that causes a processor to determine whether the at least one user has performed at least one action on the at least one object.

55. The medium of claim 54, further comprising decaying code that causes a processor to decay the user affinity of the at least one user if a determination is made that the at least one user has not performed any actions on the at least one object.

56. The medium of claim 55, wherein the decaying code decays the affinity score at a constant rate.

57. The medium of claim 56, wherein the constant rate is a predetermined percentage per predetermined period of time.

58. The medium of claim 54, further comprising resetting code that causes a processor to reset the user affinity if a determination is made that the at least one user has performed the at least one action on the at least one object.

59. The medium of claim 46, further comprising declining code that causes a processor to enable a system administrator to decline the user affinity.

60. The medium of claim 46, further comprising declining code that causes a processor to enable the user to decline the user affinity.

* * * * *